

IN THE CLAIMS

Please amend the claims as follows, substituting any amended claim(s) for the corresponding pending claim(s):

1 1. (Currently Amended) A method to identify a modulation format of a data frame received from a
2 servicing base station by a wireless terminal in a cellular wireless communication system, the method
3 comprises:

4 receiving a first Radio Frequency (RF) burst of the data frame from the servicing base station,
5 wherein the first RF burst carries a plurality of modulated symbols and a burst index;
6 when the burst index of the first RF burst comes within a predetermined index value,

7 extracting a training sequence from the first RF burst, wherein the training sequence
8 comprises modulated symbols;

9 processing the training sequence assuming a first modulation format to produce a first
10 channel energy;

11 processing the training sequence assuming a second modulation format to produce a
12 second channel energy;

13 determining a greater channel energy from the first channel energy and the second
14 channel energy;

15 receiving a subsequent RF burst within the data frame from the servicing base station, wherein
16 the subsequent RF burst carries a plurality of modulated symbols and a subsequent burst index;

17 when the subsequent burst index comes within the predetermined index value,

18 processing the training sequence assuming the first modulation format to produce a
19 subsequent first channel energy;

20 accumulating the subsequent first channel energy with the first channel energy to produce
21 an accumulated first channel energy;

22 processing the training sequence assuming the second modulation format to produce a
23 subsequent second channel energy;

24 accumulating the subsequent second channel energy with the second channel energy to
25 produce an accumulated second channel energy;

26 determining a greater accumulated channel energy from the first accumulated channel
27 energy and the second accumulated channel energy; and

28 identifying the modulation format of the data frame as corresponding to the greater accumulated
29 channel energy.

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1 2. (Previously Presented) The method of claim 1, wherein:
2 processing the training sequence(s) assuming the first modulation format to produce the first
3 channel energy further comprises derotating the symbols within the training sequence; and
4 processing the training sequence(s) assuming the second modulation format to produce the
5 second channel energy further comprises derotating the symbols within the training sequence.

1 3. (Original) The method of claim 2, wherein:
2 the first modulation format is GMSK; and
3 the second modulation format is 8PSK.

1 4. (Previously Presented) The method of claim 1, wherein extracting the training sequence further
2 comprises:
3 processing the first RF burst to produce a baseband signal; and extracting the training sequence
4 from the baseband signal.

1 5. (Previously Presented) The method of claim 1, further comprising:
2 receiving a subsequent RF burst within the data frame from the servicing base station, wherein
3 the subsequent RF burst carries a plurality of modulated symbols;
4 processing the training sequence assuming the first modulation format to produce a subsequent
5 first channel energy;
6 accumulating the subsequent first channel energy with the first channel energy to produce an
7 accumulated first channel energy;
8 processing the training sequence assuming the second modulation format to produce a subsequent
9 second channel energy;
10 accumulating the subsequent second channel energy with the second channel energy to produce
11 an accumulated second channel energy;
12 determining a greater accumulated channel energy from the first accumulated channel energy and
13 the second accumulated channel energy; and
14 identifying the modulation format of the subsequent RF burst as corresponding to the greater
15 accumulated channel energy.

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1 6. (Previously Presented) The method of claim 1, further comprising:
2 receiving a subsequent RF burst within the data frame from the servicing base station, wherein
3 the subsequent RF burst carries a plurality of modulated symbols;
4 identifying a modulation format of the subsequent RF burst based on accumulated channel
5 energies;
6 comparing the identified modulation format of the subsequent RF burst to the identified
7 modulation format of previous RF bursts of the data frame;
8 demodulating the subsequent RF burst according to the identified modulation format of the
9 subsequent RF burst; and
10 discarding the prior RF bursts of the data frame when the identified modulation format of the
11 subsequent RF burst compares unfavorably to the identified modulation format of prior RF bursts.

1 7. (Previously Presented) The method of claim 1, further comprising:
2 receiving a subsequent RF burst within the data frame from the servicing base station, wherein
3 the subsequent RF burst carries a plurality of modulated symbols;
4 identifying a modulation format of the data frame based on accumulated channel energies;
5 comparing the identified modulation format of the data frame to the identified modulation format
6 of prior RF bursts of the data frame;
7 demodulating the subsequent RF burst according to the identified modulation format of the data
8 frame; and
9 reprocessing the prior RF bursts of the data frame according to the identified modulation format
10 of the data frame when the identified modulation format of the data frame compares unfavorably to the
11 identified modulation format of the prior RF burst.

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1 8. (Previously Presented) A method to identify a modulation format of a data frame transmitted
2 between a servicing base station and a wireless terminal in a cellular wireless communication system, the
3 method comprises:

4 receiving a first Radio Frequency (RF) burst of the data frame from the servicing base station,
5 wherein the first RF burst carries a plurality of modulated symbols;

6 extracting a training sequence from the first RF burst, wherein the training sequence comprises
7 modulated symbols;

8 producing a first channel estimate based on the training sequence assuming a first modulation
9 format;

10 applying the first channel estimate to a reference training sequence of the first modulation format
11 to produce a first reconstructed training sequence;

12 comparing the training sequence to the first reconstructed training sequence to produce a first
13 error magnitude result;

14 producing a second channel estimate based on the training sequence assuming a second
15 modulation format;

16 applying the second channel estimate to a reference training sequence of the second modulation
17 format to produce a second reconstructed training sequence;

18 comparing the training sequence to the second reconstructed training sequence to produce a
19 second error magnitude result;

20 receiving a subsequent RF burst within the data frame from the servicing base station, wherein
21 the subsequent RF burst carries a plurality of modulated symbols;

22 processing the training sequence assuming the first modulation format to produce a subsequent
23 first error magnitude;

24 accumulating the subsequent first error magnitude with the first error magnitude to produce an
25 accumulated first error magnitude;

26 processing the training sequence assuming the second modulation format to produce a subsequent
27 second error magnitude;

28 accumulating the subsequent second error magnitude with the second channel energy to produce
29 an accumulated second error magnitude;

30 determining a smaller accumulated error magnitude from the first accumulated error magnitude
31 and the second accumulated error magnitude; and

32 identifying the modulation format of the data frame as the one corresponding to the smaller error
33 magnitude.

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9. (Cancelled)

1 10. (Previously Presented) The method of claim 8, wherein: the first modulation format is GMSK;
2 and the second modulation format is 8PSK.

1 11. (Previously Presented) The method of claim 8, further comprising:
2 discarding the prior RF bursts of the data frame when the identified modulation format of the
3 subsequent RF burst compares unfavorably to the identified modulation format of the prior RF bursts.

1 12. (Previously Presented) The method of claim 8, further comprising:
2 reprocessing the prior RF bursts of the data frame according to the identified modulation format
3 of the subsequent RF burst when the identified modulation format of the subsequent RF burst compares
4 unfavorably to the identified modulation format of the prior RF bursts.

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1 13. (Previously Presented) A wireless terminal that comprises:
2 a Radio Frequency (RF) front end;
3 a baseband processor communicatively coupled to the RF front end;
4 an enCOder/DECoder (CODEC) processing module communicatively coupled to the baseband
5 processor;

6 wherein, the RF front end, the baseband processor, and the CODEC processing module are
7 operable to:

8 receive a first Radio Frequency (RF) burst of a data frame from the servicing base station,
9 wherein the first RF burst carries a plurality of symbols modulated according to a modulation
10 format;

11 extract a training sequence from the first RF burst, wherein the training sequence
12 comprises modulated symbols;

13 process the training sequence assuming a first modulation format to produce a first
14 channel energy;

15 process the training sequence assuming a second modulation format to produce a second
16 channel energy;

17 receive a subsequent RF burst within the data frame from the servicing base station,
18 wherein the subsequent RF burst carries a plurality of modulated symbols;

19 process the training sequence assuming the first modulation format to produce a
20 subsequent first channel energy;

21 accumulate the subsequent first channel energy with the first channel energy to produce
22 an accumulated first channel energy;

23 process the training sequence assuming the second modulation format to produce a
24 subsequent second channel energy;

25 accumulate the subsequent second channel energy with the second channel energy to
26 produce an accumulated second channel energy;

27 determine a greater accumulated channel energy from the first accumulated channel
28 energy and the second accumulated channel energy; and

29 identify the modulation format of the data frame as a modulation format corresponding to
30 the greater accumulated channel energy.

1 14. (Previously Presented) The wireless terminal of claim 13, wherein, the RF front end, the
2 baseband processor, and the CODEC processing module are further operable to:

3 derotate the symbols within the training sequence(s) when processing the training sequence(s)
4 assuming the first modulation format to produce the first channel energy; and
5 derotate the symbols within the training sequence(s) when processing the training sequence(s)
6 assuming the second modulation format to produce the second channel energy.

1 15. (Original) The wireless terminal of claim 13, wherein: the first modulation format is GMSK; and
2 the second modulation format is 8PSK.

1 16. (Previously Presented) The wireless terminal of claim 13, wherein, the RF front end, the
2 baseband processor, and the CODEC processing module are further operable to:
3 discard the first RF burst when the identified modulation format of the subsequent RF burst
4 compares unfavorably to the identified modulation format of the first RF burst.

1 17. (Previously Presented) The wireless terminal of claim 13, wherein, the RF front end, the
2 baseband processor, and the CODEC processing module are further operable to:
3 reprocess the first RF burst according to the identified modulation format of the data frame when
4 the identified modulation format of the data frame compares unfavorably to the identified modulation
5 format of the first RF burst.

1 18. (Original) The wireless terminal of claim 13, wherein the wireless terminal operates according to
2 the GSM standard.

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1 19. (Previously Presented) A wireless terminal that comprises:
2 a Radio Frequency (RF) front end;
3 a baseband processor communicatively coupled to the RF front end;
4 wherein, the RF front end and the baseband processor are operable to:
5 receive a first Radio Frequency (RF) burst of a data frame from the servicing base station,
6 wherein the first RF burst carries a plurality of symbols modulated according to a modulation
7 format;
8 extract a training sequence from the first RF burst, wherein the training sequence
9 comprises symbols modulated according to the unknown modulation format;
10 process the training sequence assuming a first modulation format to produce a first
11 channel energy;
12 process the training sequence assuming a second modulation format to produce a second
13 channel energy;
14 receive a subsequent RF burst within the data frame from the servicing base station,
15 wherein the subsequent RF burst carries a plurality of modulated symbols;
16 process the training sequence assuming the first modulation format to produce
17 subsequent first channel energy;
18 accumulate the subsequent first channel energy with the first channel energy to produce
19 an accumulated first channel energy;
20 process the training sequence assuming the second modulation format to produce a
21 subsequent second channel energy;
22 accumulate the subsequent second channel energy with the second channel energy to
23 produce an accumulated second channel energy;
24 determine a greater accumulated channel energy from the first accumulated channel
25 energy and the second accumulated channel energy;
26 identify the modulation format of the data frame as a modulation format corresponding to
27 the greater accumulated channel energy.

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1 20. (Original) The wireless terminal of claim 19, wherein, the RF front end and the baseband
2 processor are operable to:

3 derotate the symbols within the training sequence when processing the training sequence
4 assuming the first modulation format to produce the first channel energy; and

5 derotate the symbols within the training sequence when processing the training sequence
6 assuming the second modulation format to produce the second channel energy.

1 21. (Original) The wireless terminal of claim 19, wherein: the first modulation format is GMSK; and
2 the second modulation format is 8PSK.

1 22. (Original) The wireless terminal of claim 19, wherein, the RF front end and the baseband
2 processor are operable to:

3 process the first RF burst to produce a baseband signal; and extract the training sequence from the
4 baseband signal.

1 23. (Previously Presented) The wireless terminal of claim 19, wherein, the RF front end and the
2 baseband processor are operable to:

3 discard the first RF burst when the identified modulation format of the subsequent RF burst
4 compares unfavorably to the identified modulation format of the first RF burst.

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1 24. (Original) The wireless terminal of claim 19, wherein, the RF front end and the baseband
2 processor are operable to:

3 receive a subsequent RF burst within the data frame from the servicing base station, wherein the
4 subsequent RF burst carries a plurality of modulated symbols;

5 process the training sequence assuming the first modulation format to produce a subsequent first
6 channel energy;

7 accumulate the subsequent first channel energy with the first channel energy to produce an
8 accumulated first channel energy;

9 process the training sequence assuming the second modulation format to produce a subsequent
10 second channel energy;

11 accumulate the subsequent second channel energy with the second channel energy to produce an
12 accumulated second channel energy;

13 determine a greater accumulated channel energy from the first accumulated channel energy and
14 the second accumulated channel energy;

15 identify the modulation format of the subsequent RF burst as corresponding to the greater
16 accumulated channel energy; and

17 reprocess the first RF burst according to the identified modulation format of the subsequent RF
18 burst when the identified modulation format of the subsequent RF burst compares unfavorably to the
19 identified modulation format of the first RF burst.

1 25. (Original) The wireless terminal of claim 19, wherein the wireless terminal operates according to
2 the GSM standard.

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1 26. (Previously Presented) A wireless terminal that comprises:
2 a Radio Frequency (RF) front end;
3 a baseband processor communicatively coupled to the RF front end;
4 an enCODer/DECoder (CODEC) processing module communicatively coupled to the baseband
5 processor; wherein, the RF front end, the baseband processor, and the CODEC processing module are
6 operable to:
7 receive a first Radio Frequency (RF) burst of a data frame from the servicing base station,
8 wherein the first RF burst carries a plurality of symbols modulated according to an unknown
9 modulation format;
10 extract a training sequence from the first RF burst, wherein the training sequence
11 comprises modulated symbols;
12 produce a first channel estimate based on the training sequence assuming a first
13 modulation format;
14 apply the first channel estimate to a reference training sequence of the first modulation
15 format to produce a first reconstructed training sequence;
16 produce a second channel estimate based on the training sequence assuming a second
17 modulation format;
18 apply the second channel estimate to a reference training sequence of the second
19 modulation format to produce a second reconstructed training sequence;
20 compare the training sequence to the first reconstructed training sequence to produce a
21 first error result;
22 compare the training sequence to the second reconstructed training sequence to produce a
23 second error result;
24 receive a subsequent RF burst within the data frame from the servicing base station,
25 wherein the subsequent RF burst carries a plurality of modulated symbols;
26 extract a subsequent training sequence from the subsequent RF burst;
27 apply the first channel estimate to the reference training sequence of the first modulation
28 format to produce a subsequent first reconstructed training sequence;
29 apply the second channel estimate to the reference training sequence of the second
30 modulation format to produce a subsequent second reconstructed training sequence;
31 compare the subsequent training sequence to the subsequent first reconstructed training
32 sequence to produce a subsequent first error result;

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33 compare the subsequent training sequence to the subsequent second reconstructed
34 training sequence to produce a second error result;
35 accumulate the first error result with the subsequent first error result to produce an
36 accumulated first error result;
37 accumulate the second error result with the subsequent second error result to produce an
38 accumulated second error result;
39 identify the modulation format as a modulation format of the data frame corresponding to
40 a lesser accumulated error result.

1 27. (Original) The wireless terminal of claim 26, wherein: the first modulation format is GMSK; and
2 the second modulation format is 8PSK.

1 28. (Original) The wireless terminal of claim 26, wherein, the RF front end, the baseband processor,
2 and the CODEC processing module are further operable to:
3 process the first RF burst to produce a baseband signal; and
4 extract the training sequence from the baseband signal.

1 29. (Previously Presented) The wireless terminal of claim 26, wherein, the RF front end, the
2 baseband processor, and the CODEC processing module are further operable to:
3 discard the first RF burst when the identified modulation format of the subsequent RF burst
4 compares unfavorably to the identified modulation format of the first RF burst.

1 30. (Previously Presented) The wireless terminal of claim 29, wherein, the RF front end, the
2 baseband processor, and the CODEC processing module are further operable to:
3 reprocess the first RF burst according to the identified modulation format of the data frame when
4 the identified modulation format of the data frame compares unfavorably to the identified modulation
5 format of the first RF burst.

1 31. (Original) The wireless terminal of claim 26, wherein the wireless terminal operates according to
2 the GSM standard.

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1 32. (Previously Presented) A wireless terminal that comprises:
2 a Radio Frequency (RF) front end;
3 a baseband processor communicatively coupled to the RF front end;
4 wherein, the RF front end and the baseband processor are operable to:
5 receive a first Radio Frequency (RF) burst of a data frame from the servicing base station,
6 wherein the first RF burst carries a plurality of symbols modulated according to an unknown
7 modulation format;
8 extract a training sequence from the first RF burst, wherein the training sequence
9 comprises symbols modulated according to the unknown modulation format;
10 produce a first channel estimate based on the training sequence assuming a first
11 modulation format;
12 apply the first channel estimate to a reference training sequence of the first modulation
13 format to produce a first reconstructed training sequence;
14 produce a second channel estimate based on the training sequence assuming a second
15 modulation format;
16 apply the second channel estimate to a reference training sequence of the second
17 modulation format to produce a second reconstructed training sequence;
18 compare the training sequence to the first reconstructed training sequence to produce a
19 first error result;
20 compare the training sequence to the second reconstructed training sequence to produce a
21 second error result;
22 receive a subsequent RF burst within the data frame from the servicing base station,
23 wherein the subsequent RF burst carries a plurality of modulated symbols;
24 extract a subsequent training sequence from the subsequent RF burst;
25 apply the first channel estimate to the reference training sequence of the first modulation
26 format to produce a subsequent first reconstructed training sequence;
27 apply the second channel estimate to the reference training sequence of the second
28 modulation format to produce a subsequent second reconstructed training sequence;
29 compare the subsequent training sequence to the subsequent first reconstructed training
30 sequence to produce a subsequent first error result;
31 compare the subsequent training sequence to the subsequent second reconstructed
32 training sequence to produce a second error result;

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33 accumulate the first error result with the subsequent first error result to produce an
34 accumulated first error result;
35 accumulate the second error result with the subsequent second error result to produce an
36 accumulated second error result;
37 identify the modulation format of the data frame as a modulation format corresponding to
38 the reconstructed training sequence having a lesser error result.

1 33. (Original) The wireless terminal of claim 32, wherein: the first modulation format is GMSK; and
2 the second modulation format is 8PSK.

1 34. (Previously Presented) The wireless terminal of claim 32, wherein, the RF front end and the
2 baseband processor are operable to:
3 process the RF burst(s) to produce a baseband signal; and
4 extract the training sequence from the baseband signal.

1 35. (Previously Presented) The wireless terminal of claim 32, wherein, the RF front end and the
2 baseband processor are operable to:
3 discard the first RF burst when the identified modulation format of the data frame compares
4 unfavorably to the identified modulation format of the first RF burst.

1 36. (Previously Presented) The wireless terminal of claim 32, wherein, the RF front end and the
2 baseband processor are operable to:
3 reprocess the first RF burst according to the identified modulation format of the data frame when
4 the identified modulation format of the data frame compares unfavorably to the identified modulation
5 format of the first RF burst.

1 37. (Original) The wireless terminal of claim 32, wherein the wireless terminal operates according to
2 the GSM standard.